LIVERMORE LAB
REPORT

A weekly review of scientific and technological achievements from Lawrence Livermore National Laboratory, March 26-30, 2012

IN SEARCH OF FUSION'S HOLY GRAIL

The National Ignition Facility

It's three football stadiums in size and holds the world's largest and most powerful laser.

Scientists at the National Ignition Facility recently took the biggest step toward the Holy Grail of energy independence by firing a record 1.875-megajoule shot into the laser's target chamber, surpassing its 1.8-megajoule design specification.

The experiment surpassed a critical milestone toward ignition, which would get more energy out than would go in to create it. Scientists hope to achieve ignition later this year.

To see more, go to KTVU.

Tiziana Bond

Tiziana Bond had a strong driving force to become an engineer -- her father. When the Lab engineer decided to pursue her career after encouragement from friends and peers, it was her father who had the biggest influence.

"He dissuaded me from pursuing chemistry studies since he saw (having been a chemist himself) that engineering would offer me more opportunities," she said.

Bond was recently featured in an interview on the *Electrical Engineering Community* and discussed her challenges, her experience and new projects on the horizon.

To read more, go to *Electrical Engineering Community*.

DISCOVER MAGAZINE

WASH THAT GRAY RIGHT OUT OF THE MOON

The man in the moon may be a bit younger than originally thought. Analysis of an important moon rock brought back by the Apollo 16 mission in 1972 is shedding new light on the moon's age – it may be at least 200 million years younger than once thought.

"It's not as ancient as we might think," said chief author Lars Borg, an LLNL geochemist.

Borg's study used new techniques and radioactive isotopes of lead and other elements to date the moon rock at 4.36 billion years old. The special type of rock would have floated up to the moon's crust soon after its theorized ocean of molten rock cooled.

The moon is thought to have formed from debris ejected into space after a Mars-sized body collided with the still-molten Earth about 4.5 billion years ago. The chunks that broke off formed the moon.

To read more, go *Discovery Channel*.

IN HER ELEMENT

Dawn Shaughnessy

When it comes to heavy hitters, Dawn Shaughnessy is one of a few in a league of her own.

As the group leader for experimental nuclear and radiochemistry and the principal investigator for the heavy element group at the Laboratory, Shaughnessy, along with her team, has discovered six new elements on the periodic table, the heaviest elements found to date.

This and other achievements have earned her a place in the Alameda County Women's Hall of Fame for 2012. She will be honored this Saturday at the 19th annual awards ceremony set for the Greek Orthodox Cathedral in Oakland.

As one of 11 Alameda County women to be inducted, Shaughnessy will be recognized for her work in science.

To read more, go to the Web.

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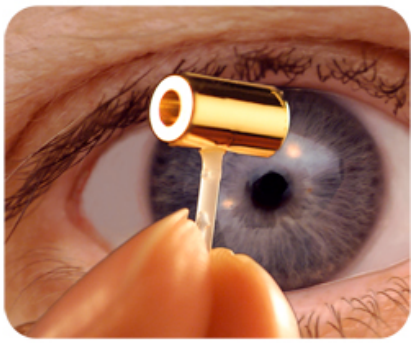

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Views of videos of optics and photonics interviews, lab tours, conference presentations, educational demonstrations, and other features on the SPIE.tv channel on YouTube have topped the 100,000 mark.

And an interview with the National Ignition Facility's Ed Moses is among the top views. He discusses the world's largest laser and the quest for fusion ignition later this year.

SPIE is the international society for optics and photonics, a not-for-profit organization founded in 1955 to advance light-based technologies.

In addition to providing updates for the scientific community, SPIE.tv strives to communicate the capabilities and importance of optics and photonics technology to non-scientists, and to share stories of the field's leading visionaries and pioneers.

To read more, go to KPIX.

LLNL applies and advances science and technology to help ensure national security and global stability. Through multi-disciplinary research and development, with particular expertise in high-energy-density physics, laser science, high-performance computing and science/engineering at the nanometer/subpicosecond scale, LLNL innovations improve security, meet energy and environmental needs and strengthen U.S. economic competitiveness. The Laboratory also partners with other research institutions, universities and industry to bring the full weight of the nation's science and technology community to bear on solving problems of national importance.

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